Center Innovation Fund: KSC CIF

Using the Solar Spectrum to Convert the Mars Atmosphere into Fuel with Novel Photocatalysts

Completed Technology Project (2016 - 2016)

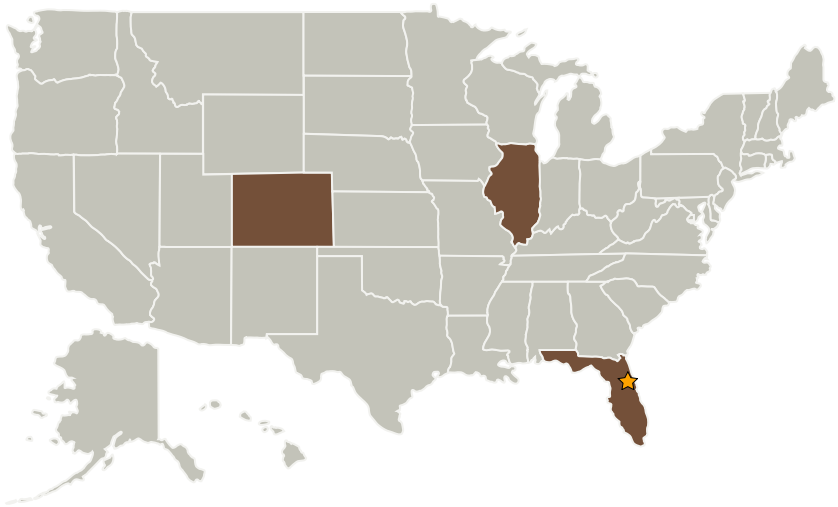
Project Introduction

A photocatalytic reactor will be constructed to demonstrate the feasibility of conversion of CO2 to fuel for ISRU Mars energy production. The photocatalytic reactor will provide performance testing of catalysts for investigation of solar effects and feasibility of photocatalytic reactions for energy production.

Anticipated Benefits

If this technology is successful at converting CO2 to fuels it will also be proposed for follow on AES funding for generating fuel using the Martian atmosphere to ISRU through AES and STMD.

Primary U.S. Work Locations and Key Partners



Using the Solar Spectrum to Convert the Mars Atmosphere into Fuel with Novel Photocatalysts

Table of Contents

Using the Solar Spectrum to Convert the Mars Atmosphere into Fuel with Novel Photocatalysts

Completed Technology Project (2016 - 2016)

Organizations Performing Work	Role	Type	Location
★Kennedy Space Center(KSC)	Lead Organization	NASA Center	Kennedy Space Center, Florida
Argonne National Laboratory(ANL)	Supporting Organization	R&D Center	Lemont, Illinois
National Renewable Energy Laboratory(NREL)	Supporting Organization	R&D Center	Golden, Colorado
University of South Florida-Main Campus(USF)	Supporting Organization	Academia	Tampa, Florida

Primary U.S. Work Locations	
Colorado	Florida
Illinois	

Project Website:

https://www.nasa.gov/directorates/spacetech/home/index.html

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Kennedy Space Center (KSC)

Responsible Program:

Center Innovation Fund: KSC CIF

Project Management

Program Director:

Michael R Lapointe

Program Manager:

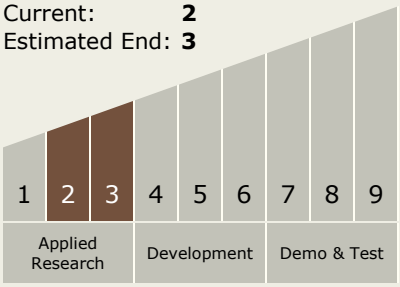
Barbara L Brown

Principal Investigator:

Anne Caraccio

Technology Maturity (TRL)

Start: **2**
Current: **2**
Estimated End: **3**



Using the Solar Spectrum to Convert the Mars Atmosphere into Fuel with Novel Photocatalysts

Completed Technology Project (2016 - 2016)

Technology Areas

Primary:

- TX07 Exploration Destination Systems
  - TX07.1 In-Situ Resource Utilization
    - TX07.1.3 Resource Processing for Production of Mission Consumables